

WHAT IS CLAIMED IS:

1. A device for selective positioning of an article engagable unit, said device comprising:

a first unit;

a second unit relatively movable with respect to said first unit, said second unit having an actuator and connectable with the article engagable unit so that said movement of said second unit relative to said first unit causes the article engagable unit to be moved along an engaging path;

a force unit for causing said movement of said second unit relative to said first unit; and

a mechanical unit capable of establishing a plurality of set positions for the article engagable unit along said engaging path, said mechanical unit being actuated by said actuator to enable positioning of the article engagable unit at any of said plurality of set positions along said engaging path.

2. The device of claim 1 wherein the article engagable unit facilitates conveyance of articles along an article path, and wherein said engaging path is angularly oriented with respect to said article path.

3. The device of claim 1 wherein said second unit includes a slider connected with said force unit to cause movement of said slider relative to said first unit, wherein said actuator is a pawl extending from said slider, and wherein said slider has a connector for connecting the article engagable unit with said slider.

4. The device of claim 1 wherein the article engagable unit is constrained to movement with said second unit.

5. The device of claim 1 wherein said force unit is a pneumatic unit.

6. The device of claim 1 wherein said device includes a control unit for controlling operation of the device.

7. The device of claim 6 wherein said control unit causes said force unit to effect movement of said second unit in first and second directions to enable said positioning of the article engagable unit at any of said plurality of set positions along said engaging path.

8. The device of claim 1 wherein said mechanical unit has first and second movable portions with said first movable portion being engagable with said actuator and said second movable portion providing a plurality of

stops for establishing said plurality of set positions for the article engagable unit.

9. The device of claim 8 wherein said first movable portion is a ratchet wheel and said second movable portion is a shaped wheel constrained to rotation with said ratchet wheel and having said plurality of stops formed thereon to thereby establish said plurality of set positions for the article engagable unit.

10. The device of claim 9 wherein said ratchet wheel and said shaped wheel are rotatively mounted on said first unit.

11. The device of claim 8 wherein said force unit causes said second unit to be driven in a first direction to cause said actuator to actuate said mechanical unit, and causes said second unit to be driven in a second direction to cause said second unit to engage one of said stops at a stop area to establish one of said set positions of said plurality of set positions for the article engagable unit.

12. The device of claim 11 wherein said force unit causes said second unit to be repeatedly driven in said first and second directions until positioned at said stop area to engage the one of said stops establishing the then desired set position for the article engagable unit.

13. A device for selective positioning of an article engagable guide to facilitate conveyance of articles along an article path, said device comprising:

a first unit;

a second unit having a slider movable with respect to said first unit, said slider having a pawl extending therefrom and a connector for connecting the article guide with said slider so that the article guide is moved along a guide path toward and away from the middle of the article path upon movement of said slider with respect to said first unit;

a force unit for causing said movement of said slider with respect to said first unit; and

a mechanical unit having a ratchet wheel and a shaped wheel constrained to rotation with said ratchet wheel, said shaped wheel being shaped to provide a plurality of stops each engagable with said slider at a stop area to thereby establish a set position for the article guide along said guide path, and said ratchet wheel being engagable with said pawl to cause rotation of said ratchet wheel and said shaped wheel to thereby provide different ones of said plurality of stops at said stop area for engagement thereat with said slider to

enable positioning of the article guide at any of said plurality of set positions along said guide path.

14. The device of claim 13 wherein said ratchet wheel and said shaped wheel are rotated a limited distance upon each said engagement of said ratchet wheel with said pawl, and wherein said plurality of stops provided at said shaped wheel are spaced about the periphery of said spaced wheel to enable a different one of said plurality of stops to be provided to said stop area for engagement thereat with said slider after each said limited distance rotation of said shaped wheel.

15. The device of claim 14 wherein said force unit is a pneumatic unit causing said slider to be moved in a first direction toward the middle of the article path with said pawl engaging said ratchet wheel during said movement of said slider toward the middle of the article path to cause each said limited distance rotation of said ratchet wheel and said shaped wheel, and thereafter causing movement of said slider in a second direction away from the middle of the article path to said stop area for engagement thereat with said different one of said plurality of stops then at said stop area.

16. The device of claim 15 wherein said pneumatic unit repeatedly causes said slider to be moved toward and away from the middle of the article path until a selected one of said plurality of stops spaced about said periphery of said shaped wheel is positioned at said stop area to engage said slider thereat to thereby provide the set position then needed for articles then to be conveyed along the article path.

17. The device of claim 13 wherein the device includes a control unit for controlling operation of the device.

18. A device for selective positioning of an article guide to facilitate conveyance of articles along an article path, said device comprising:

a mounting unit adjacent to the article path;

a movable unit having a slider mounted on and relatively movable with respect to said mounting unit in first and second opposite directions, said slider having a pawl extending therefrom and a connector at the end portion for connecting the article guide with said slider so that the article guide is moved along a guide path toward and away from the middle of the article path upon movement of said slider relative to said mounting unit;

a pneumatic unit for causing movement of said slider in said first and second opposite directions;

a mechanical unit having a ratchet wheel and a shaped wheel rotatively mounted on said mounting unit with said ratchet wheel and said shaped wheel being constrained to common rotation, said ratchet wheel having shaped teeth and being engagable with said pawl so that said ratchet wheel and said shaped wheel are rotated a limited distance upon each actuation of said ratchet wheel by said pawl during said movement of said slider in said first direction, and said shaped wheel having a plurality of stops formed thereon about the periphery of

said shaped wheel with a different one of said plurality of stops becoming engagable with said slider at a stop area upon each repeated limited distance rotation of said shaped wheel followed by movement of said slider in said second direction to said stop area; and

a control unit for causing said pneumatic unit to effect movement of said slider in said first and second opposite directions until a then needed one of said plurality of stops is positioned at said stop area to engage said slider thereat to thereby establish the then needed set position for the article guide.

19. The device of claim 18 wherein said device is a first device, and wherein a second device like that of said first device is utilized at the side of the article path opposite to that of the first device.

20. The device of claim 18 wherein a plurality of first and second devices are utilized along the article path, and wherein said control unit controls positioning of the article guides of the first and second devices.



21. A method for selective positioning of an article engagable unit, said method comprising:

providing a mechanical unit having movable stops capable of establishing a plurality of set positions for the article engagable unit along an engaging path;

actuating the mechanical unit to position one of the movable stops at a stop area; and

utilizing the movable stop at the stop area to position the article engagable unit at one of the plurality of set positions along the engaging path.

22. The method of claim 21 wherein said method includes providing a slider connected with the article engagable unit to position the article engagable unit along the engaging path, moving the slider in a first direction and actuating the mechanical unit during movement of the slider in the first direction to position the one of the movable stops at the stop area, and moving the slider in a second direction to engage the movable stop at the stop area to position the article engagable unit at the one of the plurality of set positions along the engaging path.

23. The method of claim 22 wherein said actuation of the mechanical unit is repeated until a then needed stop is at the stop area to establish a set position then needed for the article engagable unit along the engaging path.

24. The method of claim 22 wherein the article engagable unit facilitates conveyance of articles along an article path with movement of the slider in the first direction being toward the middle of the article path, and with movement of the slider in the second direction being away from the middle of the article path.

25. The method of claim 22 wherein said method includes providing a pneumatic unit for moving the slider in the first and second directions.

26. A method for selective positioning of an article guide to facilitate conveyance of articles along an article path, said method comprising:

providing a mechanical unit having movable stops with each of the movable stops being capable of establishing a different one of a plurality of set positions for the article guide along a guide path when positioned at a stop area;

selecting a then needed one of the plurality of set positions for the article guide along the guide path to facilitate conveyance of articles along the article path;

actuating the mechanical unit such that the movable stop then needed for the selected one of the plurality of set positions is positioned at the stop area; and

moving the article guide to the then needed set position as established by the movable stop then at the stop area.

27. The method of claim 26 wherein said method includes providing a slider connected with the article guide to position the article guide along the guide path, repeatedly moving the slider in first and second directions to repeatedly actuate the mechanical unit during movement of the slider in the first direction to position the movable stop then needed for the selected one of the plurality of set positions at the stop area, and thereafter moving the slider in the second direction to engage the needed movable stop then at the stop area to position the article guide at the then selected set position.